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Attorney Docket No.: 25840-501

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PTO/SB (12-97)
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Modified Form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Application Number	10/677,977
	Filing Date	October 2, 2003
	First Named Inventor	Jack Nguyen
	Group Art Unit	1639
	Examiner Name	Teresa D. Wessendorf
	Attorney Docket Number	25840-501

U.S. PATENT DOCUMENTS							
Exam Initials	Cite No.	U.S. Patent Document No.	Issue Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate
JNW	A1	6,630,138	10/7/03	Gerlitz <i>et al.</i>	424	94.64	7/22/02
JNW	A2	6,319,713	11/20/01	Patten <i>et al.</i>	435	440	6/25/99

U.S. PUBLISHED APPLICATION DOCUMENTS							
Exam Initials	Cite No.	U.S. Published Application No.	Published Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate
JNW	B1	2003/0068792	4/10/03	Chen <i>et al.</i>	435	183	12/13/01

FOREIGN PATENT DOCUMENTS							
Exam Initials	Cite No.	Foreign Patent Document Office Number		Name of Patentee(s) or Applicant(s)	Date of Publication	Translation Yes No	
JNW	C1	WO	0159084	Eli Lilly and Co.	8/16/01		X

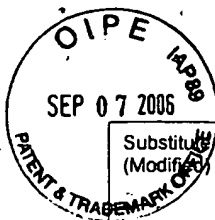
OTHER PRIOR ART - NON-PATENT LITERATURE DOCUMENTS		
Exam Initials	Cite No.	Name of Author, Title (when appropriate), Publication, Volume, Page(s), Date, Etc.
JNW	D1	Berg <i>et al.</i> , Engineering the proteolytic specificity of activated protein C improves its pharmacological properties. PNAS 100(8): 4423-4428 (15 Apr. 2003).
	D2	Harris and Craik, Engineering enzyme specificity. Curr. Op. Chem. Biol. 2: 127-132 (1998).
	D3	Stubbs and Bode, Coagulation factors and their inhibitors. Curr. Op. Struct. Biol. 4: 823-832 (1994).
	D4	Perona and Craik, Evolutionary divergence of substrate specificity within the chymotrypsin-like serine protease fold. J. Biol. Chem. 272(48): 29987-29990 (28 Nov. 1997).
	D5	Perona and Craik, Structural basis of substrate specificity in the serine proteases. Protein Sci. 4:337-360 (1995).
	D6	Kraut, How do enzymes work? Science 242: 533-540 (28 Oct. 1988).

* a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. _____, filed _____, and relied upon for an earlier filing date under 35 U.S.C. §120 (continuation, continuation-in-part, and divisional applications).

Examiner Signature	T. D. W.	Date Considered	11/24/06
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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 19049-005001/4905	Application No. 10/677,977
List of Patents and Publications for Applicant's Information Disclosure Statement (37 CFR §1.98(b))		Applicant Nguyen et al.	
		Filing Date October 2, 2003	Group Art Unit 1639

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
TW	AA	2002/0034776	03/21/02	Bornscheuer et al.	435	471	09/28/98
	AB	2002/022243	02/21/02	Harris et al.	435	23	05/25/01
	AC	2003/0199038	10/23/03	Brody et al.	435	8	04/22/03
	AD	2003/0068792	04/10/03	Chen et al.	485	183	12/13/01
	AE	2003/0049689	03/13/03	Edwards et al.	435	7.1	06/12/02
	AF	2004/0072276	04/15/04	Koltermann et al.	435	23	05/09/03
	AG	2004/0081648	04/29/04	Afeyan et al.	435	183	08/27/03
	AH	2004/0115727	06/17/04	Steward et al.	435	69.3	12/11/02
	AI	2004/0175777	09/09/04	Harris et al.	435	23	10/15/03
	AJ	2004/0203107	10/14/04	Murray et al.	435	69.1	05/07/04
	AK	2005/0002897	01/06/05	Haupts et al.	424	85.1	06/18/04
	AL	2005/0059126	03/17/05	Haupts et al.	435	183	06/18/04
	AM	2005/0175581	08/11/05	Haupts et al.	435	85.1	12/22/04
	AN	2006/0099625	05/11/06	Craik et al.	536	23.1	10/18/05
	AO	2006/0104979	05/18/06	Craik et al.	536	23.1	10/18/05
	AP	2006/0134086	06/22/06	Chen et al.	424	94.1	06/30/04
	AQ	5223409	06/29/93	Ladner et al.	435	69.7	03/01/91
	AR	6165794	12/26/00	Craik et al.	435	455	11/10/94
	AS	6319713	11/20/01	Patten et al.	435	440	06/25/99
	AT	6534310	03/18/03	Craik et al.	435	325	06/01/00
	AU	6680178	01/20/04	Harris et al.	435	23	05/25/01
	AV	6797461	09/28/04	Niles et al.	435	4	09/19/01
	AW	7030231	04/18/06	Craik et al.	536	23.1	09/30/99

Foreign Patent Documents or Published Foreign Patent Applications							
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes No
TW	AX	1361284	11/12/03	EP	-	-	
	AY	2004/113522	12/29/04	PCT <i>Wored</i>	-	-	
	AZ	92/06204	04/16/92	PCT "	-	-	
	BA	01/57194	08/09/01	PCT "	-	-	

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Foreign Patent Documents or Published Foreign Patent Applications								
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							Yes	No
JW	BB	01/94332	12/13/01	PCT <i>World</i>			X	
	BC	02/34795	05/02/02	PCT //			X	
	BD	03/095670	11/20/03	PCT //			X	
	BE	04/113521	12/29/04	PCT //			X	
	BF	06/067198	06/29/06	PCT //			X	

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
JW	BG	Ballinger, M.D., et al. "Furilisin: a variant of subtilisin BPN' engineered for cleaving tribasic substrates," Biochemistry, 35(42):13579-85, (1996).
	BH	Backes, B.J., et al. "Synthesis of positional-scanning libraries of fluorogenic peptide substrates to define the extended substrate specificity of plasmin and thrombin," Nat Biotechnol. 18(2):187-93, (2000).
	BI	Berg, D.T., et al. "Engineering the proteolytic specificity of activated protein C improves its pharmacological properties," Proc Natl Acad Sci U S A 100(8): 4423-4428, (2003).
	BJ	Bone R., et al., "Structural basis for broad specificity in alpha-lytic protease mutants," Biochemistry. 30(43):10388-98, (1991).
	BK	Bowie, J.U. and R.T. Sauer. "Identifying determinants of folding and activity for a protein of unknown Structure," Proc Natl Acad Sci U S A. 86(7):2152-6, (1989).
	BL	Corey D.R., et al., "Trypsin display on the surface of bacteriophage," Gene 128(1):129-34, (1993).
	BM	Cory S.A., "Fascinating death factor," Nature 367(6461):317-8, (1994).
	BN	Craik, C.S., et al., "Redesigning Trypsin: Alteration of Substrate Specificity, Catalytic Activity and Protein Conformation," Science, 228(4697):291-297. (1987).
	BO	Craik C.S., "Inhibitors for epithelial cancer associated proteases - structure based design," NIH Grant No. CA072006, (1997-2002).
	BP	Darzynkiewicz, Z., et al., "Features of apoptotic cells measured by flow cytometry," Cytometry, 13(8):795-808, (1992).
	BQ	Derbyshire, K.M., et al., "A simple and efficient procedure for saturation mutagenesis using mixed oligodeoxynucleotides," Gene, 46(2-3):145-52, (1986).
	BR	Dynan, W.S. and Tjian R. "Control of eukaryotic messenger RNA synthesis by sequence-specific DNA-binding proteins," Nature 316(6031):774-8, (1985).
	BS	Friedrich, R., et al., "Catalytic domain structures of MT-SP1/matritase, a matrix-degrading transmembrane serine proteinase," J Biol Chem., 277(3):2160-8, (2002).
	BT	Gill, S.C. and P.H. von Hippel, "Calculation of protein extinction coefficients from amino acid sequence data," Anal Biochem., 182(2):319-26, (1989). Erratum in: Anal Biochem., 189(2):283, (1990).
	BU	Gillmor, S.A., et al., "Structural Determinants of Specificity in the Cysteine Protease Cruzain," Protein Sci., 6:1603-1611, (1997).
	BV	Gorczyca, W., et al., "Detection of DNA strand breaks in individual apoptotic cells by the in situ terminal deoxynucleotidyl transferase and nick translation assays," Cancer Res., 53(8):1945-51, (1993).

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Other Documents (include Author, Title, Date, and Place of Publication)				
Examiner Initial	Desig. ID	Document		
fjw	BW	Gron, H., et al., "Extensive comparison of the substrate preferences of two subtilisins as determined with peptide substrates which are based on the principle of intramolecular quenching," <i>Biochemistry</i> , 31(26):6011-8, (1992).		
	BX	Harris, J.L., et al., "Definition and redesign of the extended substrate specificity of granzyme B," <i>J Biol Chem.</i> , 273(42):27364-73, (1998).		
	BY	Harris, J.L., et al., "Engineering enzyme specificity," <i>Curr Op Chem Biol.</i> , 2(1):127-132, (1998).		
	BZ	Harris, J.L., et al., "Rapid and general profiling of protease specificity by using combinatorial fluorogenic substrate libraries," <i>Proc Natl Acad Sci U S A.</i> , 97(14):7754-9, (2000).		
	CA	He, G.P., et al., "A eukaryotic transcriptional repressor with carboxypeptidase activity," <i>Nature</i> , 378:92-96, (1995).		
	CB	Higaki J., et al., "Introduction of a Cysteine Protease Active Site into Trypsin," <i>Biochem.</i> , 28:9256-9263, (1989).		
	CC	Higaki J.N., et al., "Regulation of Serine Protease Activity by an Engineered Metal Switch," <i>Biochem.</i> , 29:8582-8586, (1990).		
	CD	Hopfner, K.P., et al., "Coagulation factor IXa: the relaxed conformation of Tyr99 blocks substrate binding," <i>Structure</i> , 7(8):989-96, (1999).		
	CE	Jameson, G.W. et al., "Determination of the operational molarity of solutions of bovine alpha-chymotrypsin, trypsin, thrombin and factor Xa by spectrofluorimetric titration," <i>Biochem J.</i> , 131(1):107-17, (1973).		
	CF	Kraut J., "How do enzymes work?," <i>Science</i> , 242(4878):533-40, (1988).		
	CG	Laboissiere M.C., et al., "Computer-assisted mutagenesis of ecotin to engineer its secondary binding site for urokinase inhibition," <i>J Biol Chem.</i> , 277(29):26623-31, (2002).		
	CH	Legendre, D., et al., "Display of active subtilisin 309 on phage: analysis of parameters influencing the selection of subtilisin variants with changed substrate specificity from libraries using phosphonylating inhibitors," <i>J Mol Biol.</i> , 296(1):87-102, (2000).		
	CI	Lowman, H.B., et al., "Selecting high-affinity binding proteins by monovalent phage display," <i>Biochemistry</i> , 30(45):10832-8, (1991).		
	CJ	Maly, D.J., et al., "Expedient solid-phase synthesis of fluorogenic protease substrates using the 7-amino-4-carbamoylmethylcoumarin (ACC) fluorophore," <i>J Org Chem.</i> , 67(3):910-5, (2002).		
	CK	Matayoshi, E.D., et al., "Novel fluorogenic substrates for assaying retroviral proteases by resonance energy transfer," <i>Science</i> , 247(4945):954-8, (1990).		
	CL	Mathieu, M.A., et al., "Substrate specificity of schistosome versus human legumain determined by P1-P3 peptide libraries," <i>Mol Biochem Parasitol.</i> , 121(1):99-105, (2002).		
CM	Meldal, M. and K. Breddam, "Anthranilamide and nitrotyrosine as a donor-acceptor pair in internally quenched fluorescent substrates for endopeptidases: multicolumn peptide synthesis of enzyme substrates for subtilisin Carlsberg and pepsin," <i>Anal Biochem.</i> , 195(1):141-7, (1991).			
CN	Miyazaki, K. and F.H. Arnold, "Exploring nonnatural evolutionary pathways by saturation mutagenesis: rapid improvement of protein function," <i>J Mol Evol.</i> , 49(6):716-20, (1999).			
CO	Needleman, S.B. and C.D. Wunsch., "A general method applicable to the search for similarities in the amino acid sequence of two proteins," <i>J Mol Biol.</i> , 48(3):443-53, (1970).			
CP	Ner, S.S., et al., "A simple and efficient procedure for generating random point mutations and for codon replacements using mixed oligodeoxynucleotides," <i>DNA</i> , 7(2):127-134, (1988).			
CQ	Nicholson, D.W., et al., "Identification and inhibition of the ICE/CED-3 protease necessary for mammalian apoptosis," <i>Nature</i> , 376(6535):37 - 43, (2002).			
✓	CR	Ostresh, J.M., et al., "Peptide libraries: determination of relative reaction rates of protected amino acids in competitive couplings," <i>Biopolymers</i> , 34(12):1681-9, (1994).		

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fjw

Date Considered

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				Filing Date October 2, 2003	Group Art Unit 1639
Other Documents (include Author, Title, Date, and Place of Publication)					
Examiner Initial	Desig. ID	Document			
TBW	CS	Perona, J.J., et al., "Relocating a negative charge in the binding pocket of trypsin," J Mol Biol., 230(3):934-49, (1993).			
	CT	Perona, J.J., et al., "Structural basis of substrate specificity in the serine proteases," Protein Science, 4(3):337-360, (1995).			
	CU	Perona J.J., et al., "Evolutionary divergence of substrate specificity within the chymotrypsin-like serine protease fold," J. Biol. Chem., 272(48):29987-29990, (1997).			
	CV	Porteu, M., et al., "Human neutrophil elastase releases a ligand-binding fragment from the 75-kDa tumor necrosis factor (TNF) receptor. Comparison with the proteolytic activity responsible for shedding of TNF receptors from stimulated neutrophils," J. Biol. Chem., 266(28):18846-18853, (1991).			
	CW	Reidhaar-Olson, J.F. and R.T. Sauer, "Combinatorial cassette mutagenesis as a probe of the informational content of protein sequences," Science, 241(4861):53-7, (1988).			
	CX	Sidhu, S.S., et al., "Phage display for selection of novel binding peptides," Methods Enzymol., 328:333-63, (2000).			
	CY	Sprang, S., et al., "The three-dimensional structure of Asn102 mutant of trypsin: role of Asp102 in serine protease catalysis," Science, 237(4817):905-9, (1987).			
	CZ	Stubbs, M.T., et al., "Coagulation factors and their inhibitors," Curr Op Chem Biol., 4(6):823-832, (1994).			
	DA	van Kessel, K.P., et al., "Inactivation of recombinant human tumor necrosis factor-alpha by proteolytic enzymes released from stimulated human neutrophils," J Immunol., 147(11):3862-8, (1991).			
	DB	Wang, S.X., et al., "Crystal structure of thrombin-ecotin reveals conformational changes and extended interactions," Biochemistry, 40(34):10038-46, (2001).			
	DC	Waugh, S.M., et al., "The structure of the pro-apoptotic protease granzyme B reveals the molecular determinants of its specificity," Nat Struct Biol., (9):762-5, (2000).			
✓	DD	Wells, J.A., et al., "On the evolution of specificity and catalysis in subtilisin," Cold Spring Harb Symp Quant Biol., 52:647-52, (1987).			

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